

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

CARDIONET, LLC,

and

BRAEMAR MANUFACTURING, LLC,

Plaintiffs,

v.

INFOBIONIC, INC.,

Defendant.

Civil Action No. 1:15-cv-11803-IT

Hon. Indira Talwani

**DEFENDANT INFOBIONIC, INC.'S MEMORANDUM IN SUPPORT OF
ITS MOTION FOR JUDGMENT ON THE PLEADINGS THAT ALL
ASSERTED CLAIMS OF U.S. PATENT NOS. RE43,767, 7,212,850,
7,907,996 AND 7,099,715 ARE INVALID UNDER 35 U.S.C. § 101**

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I. INTRODUCTION

The asserted claims of four patents in this suit—U.S. Patent Nos. RE43,767 (“’767 patent”), 7,212,850 (“’850 patent”), 7,907,996 (“’996 patent”), and 7,099,715 (“’715 patent”) (collectively “the patents-at-issue,” attached as Ex. 1-4 to Sanders Decl.)—are patent-ineligible under 35 U.S.C. § 101. Those claims fail to meet § 101’s threshold eligibility requirement because they are directed to abstract ideas and mental processes long used by doctors in monitoring patients and analyzing patient data, and only automate those human activities using conventional computer technology.

The Supreme Court has repeatedly emphasized that abstract ideas, including mental processes and basic human activities, are ineligible for patent protection under § 101. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); *Bilski v. Kappos*, 561 U.S. 593, 601-02 (2010). That principle cannot be circumvented merely by limiting an idea to a particular technological environment or by implementing it using generic computer components and functions. *Alice*, 134 S. Ct. at 2359-60. In a series of recent cases, the Supreme Court, the Federal Circuit, and this Court have invalidated computer-implemented patent claims under § 101. *See, e.g., id.*; *In re TLI Commc’ns LLC Patent Litig.*, --- F.3d ----, 2016 WL 2865693, at *5 (Fed. Cir. May 17, 2016); *American Well Corp. v. Teladoc, Inc.*, --- F. Supp. 3d ----, 2016 WL 3255011, at *1 (D. Mass. June 13, 2016).

Each of the asserted claims of the patents-at-issue here suffers from the same basic defect as the claims in those cases. Each is directed to an abstract idea that is well-grounded in common human activities and thought processes long used by medical professionals—i.e.:

- (i) assessing a set of patient data to determine whether more data is needed; and if so, obtaining additional data (’767 patent),

- (ii) comparing data from a patient monitoring device to human assessments to make sure it is accurate before displaying the data in a convenient format ('850 and '996 patents); and
- (iii) filtering patient heartbeat signals when necessary to improve accuracy ('715 patent).

In fact, most of the claims, as recited, expressly require human involvement.

The asserted patent claims add nothing inventive to those abstract steps. Instead, the patents admit that the purported “inventions” require only conventional computer components and routine medical instruments and techniques. But under established Supreme Court and Federal Circuit case law, such features are insufficient to convert an abstract idea into patent-eligible subject matter. *See, e.g., Alice*, 134 S. Ct. at 2355-59; *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). The fact that the claims are limited to certain types of routine and well-understood data (such as atrial fibrillation data in the '850 and '996 patents and heartbeat signals in the '715 patent) is an insignificant field-of-use limitation that also does not confer patent-eligibility, as the courts have repeatedly held.

II. BACKGROUND

Plaintiffs CardioNet, LLC's and Braemar Manufacturing, LLC's (collectively, “CardioNet's”) Second Amended Complaint [#135] filed in March 2016 alleges, among other things, that Defendant InfoBionic, Inc. (“InfoBionic”) infringes the patents-at-issue. CardioNet provides specific allegations for only four claims: claim 9 of the '767 patent, claim 31 of the '850 patent, claim 12 of the '996 patent, and claim 20 of the '715 patent. *Id.* ¶¶ 60-67, 74-80, 87-97, 104-109.

A. The '767 Patent

The '767 patent, entitled “Control of Data Transmission Between a Remote Monitoring Unit and a Central Unit,” is directed to monitoring patient data and determining whether

additional data is required. '767 patent (Ex. 1). According to the '767 patent, doctors needed a better way to collect patient data that minimized “unnecessarily large and unnecessarily frequent data transfers,” which could deplete resources. *Id.* at 2:23-26. The '767 patent’s purported solution is to determine whether additional data is necessary before sending it. The patent implements that concept using three basic steps: (1) a remote monitoring unit collects and analyzes patient data and sends an initial data set to a central unit; (2) the central unit determines whether additional data is needed; and (3) if so, the central unit requests, and the remote monitoring unit provides, additional data. *See id.* at Abstract, 1:66-2:19.

The '767 patent does not purport to provide any new or specific way of performing this basic medical data-gathering function. Instead, the specification admits that the “invention” requires nothing more than conventional monitoring devices (in “any operable form”) to collect the data, conventional techniques and computer components for processing the data (the derived data set “is obtained from the monitored data set by conventional waveform processing procedures” and any “central processing unit (CPU) 60” can “perform [the] calculations and analysis”), and conventional communication technology (such as a cellular, satellite, or land-line telephones) to transmit the data. *See id.* at 2:49-52, 3:40-43, 4:6-8, 4:50-60. Nor does the patent provide any innovative or specific way to decide whether to request additional data—the decision may be based on “human review and consideration of the situation” or may be “fully automated,” and may be guided by “patient history.” *Id.* at 5:40-51.

Claim 9 (the only specifically asserted claim of the '767 patent) provides:

- 9.** A method of monitoring a patient, comprising the steps of providing a monitoring apparatus including
 - a remote monitoring unit associated with the patient,
 - a central unit, and

a communications device which selectively establishes a communications link between the remote monitoring unit and the central unit;

the remote monitoring unit obtaining a monitored data set for the patient;

the remote monitoring unit establishing a communications link with the central unit;

the remote monitoring unit transmitting to the central unit an initially transmitted data set related to the monitored data set;

the central unit analyzing the initially transmitted data set to determine whether an additional data set related to the monitored data set is required to be transmitted by the remote monitoring unit;

the central unit, when the additional data set related to the monitored data set is required, instructing the remote monitoring unit as to an that the additional transmitted data set that is to be transmitted from the remote monitoring unit to the central unit and instructing as to a time at which the additional transmitted data set is to be transmitted; and

the remote monitoring unit transmitting the additional transmitted data set to the central unit at the time instructed by the central unit based on the condition sensed initially transmitted data set received from the remote monitoring unit.

Id. at 8:1-30.

B. The '850 and '996 Patents

The '850 and '996 patents, which share an identical specification and are each entitled “System and Method for Processing and Presenting Arrhythmia Information to Facilitate Heart Arrhythmia Identification and Treatment,” are also directed to common medical practices and mental steps. '850 patent (Ex. 2); '996 patent (Ex. 3). These patents describe the process of determining whether a device (such as a monitoring device worn by a patient) has accurately identified a patient's irregular heartbeat events (atrial fibrillations or other arrhythmias¹) by comparing the results to human assessments and, if there is sufficient correlation, displaying patient's heart data (heart rate trend and atrial fibrillation burden) on a common timescale. *See* '850 patent (Ex. 2) at Abstract, 1:30-4, 2:25-51, 2:55-3:32, 3:33-46, 4:4-29.

¹ Atrial fibrillation (“AF”) is a form of arrhythmia involving fast and irregular heartbeats.

The '850 and '996 patents do not purport to describe new or improved hardware or software to implement this process, or new ways to detect or treat arrhythmias. Instead, the specification expressly admits that the process requires only conventional monitoring devices to collect the data (such as the commercially available CardioNet device), conventional techniques to analyze the data (using unspecified "predefined criteria"), conventional computer technology to process the data (any generic "digital electronic circuitry, ... computer hardware, firmware, software, or ... combinations of the forgoing"), and conventional "communication network[s]" to transmit the data. *See* '850 patent (Ex. 2) at 4:65-5:2, 2:25-44, 2:45-51, 5:20-49, 3:14-19.

Indeed, the specification depicts the system as a series of black boxes for the monitoring devices (101 and 102), network (103), monitoring center (104), and human involvement (108):

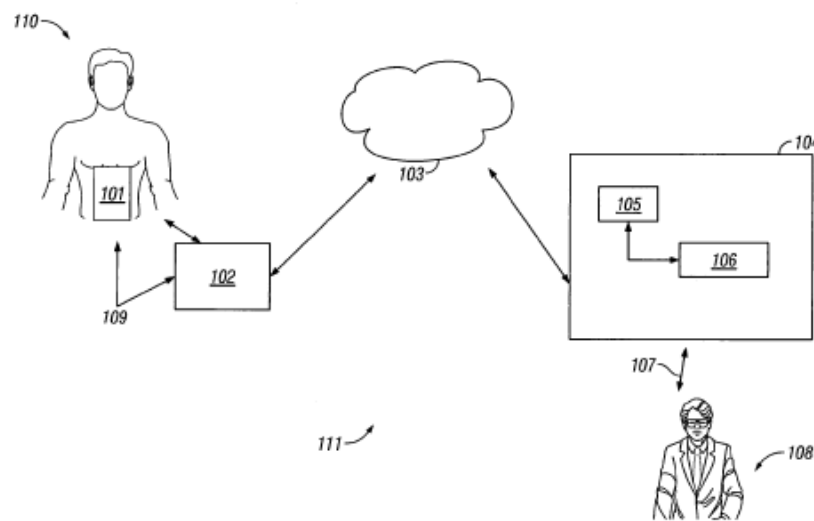


FIG. 1

Id. at 2:25-3:6, Fig. 1.

The two specifically asserted claims—claim 31 of the '850 patent and claim 12 of the '996 patent—are no more specific. Claim 31 of the '850 patent provides:

31. A system for reporting information related to arrhythmia events comprising:

- a monitoring system configured to process and report physiological data, including heart rate data, for a living being and configured to identify arrhythmia events from the physiological data;
 - a monitoring station for receiving the physiological data from the monitoring system;
 - a processing system configured to receive arrhythmia information from the monitoring system and configured to receive human-assessed arrhythmia information from the monitoring station
- wherein the human-assessed arrhythmia information derives from at least a portion of the physiological data and
- wherein the processing system is capable of pictographically presenting, using a common time scale, information regarding the heart rate data during a defined time period and regarding duration of arrhythmia event activity, according to the identified arrhythmia events, during the defined time period such that heart rate trend is presented with arrhythmia event burden.

Id. at 9:40-60 (formatting altered). Claim 12 of the '996 patent claims materially the same subject matter, except couched as software. '996 Patent (Ex. 3) at 6:53-7:12.

C. The '715 Patent

The '715 patent, entitled "Distributed Cardiac Activity Monitoring with Selective Filtering," is directed to filtering patient heartbeat signals selectively, when there may be interference with accurate heartbeat measurements. *See* '715 patent (Ex. 4) at Abstract, 1:17-43. As the specification explains, a patient's heartrate is typically identified based on the main peaks (called "R waves") in the patient's electrocardiogram ("ECG"), as depicted in Figure 3:

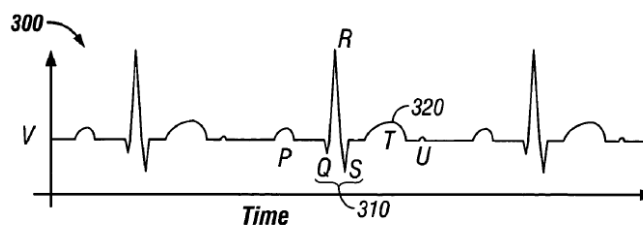


FIG. 3

See id. at 1:17-21, 3:61-65; Fig. 3. R waves are usually followed by a shorter peak (called a "T wave"), but sometimes a patient's T wave is so tall that it is mistaken for an R wave, resulting in

inaccurate heart rate data. *Id.* at 3:53-57. For this reason, as the specification explains, such data has commonly been filtered (by a “T wave filter”) to shorten the T waves, while preserving the R waves. *Id.* at 3:57-60.

The ’715 patent does not purport to provide any new or specific way of performing this well-known filtering (stating only that “[t]he T wave filter can be a custom highpass-like filter” and disclosing an “example T wave filter”). *Id.* at 4:13-28. Nor does the patent disclose any innovative hardware or software for implementing the process. Indeed, the ’715 patent admits that all of the monitoring, computer, and networking components and features are conventional. *See id.* at 5:34-39, 2:3-36, 2:20-23, 2:44-48; 5:58-6:21. The patent’s only purported innovation is to “selectively” activate the T wave filter if an operator sees that a patient has abnormal T waves (or if some other “predetermined criteria” are met). *Id.* at 1:40-43, 2:44-59, 4:61-5:10.

Claim 20 claims this “selective filtering” concept from the perspective of the device monitoring the patient’s heartbeats:

20. A cardiac monitoring apparatus comprising:

- a communications interface;
- a real-time heart beat detector;
- a T wave filter frequency domain; and
- a selector that activates the T wave filter frequency domain with respect to the real-time heart beat detector in response to a message, wherein the activated T wave filter frequency domain preprocesses a cardiac signal provided to the real-time heart beat detector.

Id. at 7:45-53.

III. LEGAL STANDARD

Section 101 of the Patent Act provides that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of

this title.” 35 U.S.C. § 101. However, as the Supreme Court has long recognized, § 101 “contains an important implicit exception” for abstract ideas. *Alice*, 134 S. Ct. at 2354. The Supreme Court’s two-step *Alice* framework governs whether the claims here pass § 101’s gateway eligibility threshold. *Id.* at 2355, 2360.

First, the Court determines whether the claims are directed to an abstract idea. *Id.* at 2355. Such ideas are patent ineligible because they are basic tools in the “storehouse of knowledge” that are “free to all ... and reserved exclusively to none.” *Bilski*, 561 U.S. at 602. “[M]onopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it,’ thereby thwarting the primary object of the patent laws.” *Alice*, 134 S. Ct. at 2354 (alteration original) (citation omitted). “An abstract idea does not become nonabstract by limiting the invention to a particular field of use [such as the medical field] or technological environment [such as a computer system].” *Intellectual Ventures I LLC v. Capital One Bank*, 792 F.3d 1363, 1366 (Fed. Cir. 2015) (“*IV*”); *see also, e.g., Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714 (Fed. Cir. 2014) (identifying the abstract idea “at the heart of” computer-implemented claims); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015) (finding the “essential, ‘most import aspect’” of computer claims an abstract idea).

Second, the Court determines whether the claims add “significantly more” to the abstract idea—something “inventive”—that is “sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 134 S. Ct. at 2357 (citation omitted). The prohibition on patenting abstract ideas cannot be circumvented through “draftsman’s art” or by dressing up an abstract idea with “well-understood,” “routine,” or “conventional” activities—or other inconsequential features. *Id.* at 2357-59 (internal quotations omitted). For example,

implementing an abstract principle using generic computer components is insufficient. *Id.* These principles apply equally to method and system claims. *Id.* at 2360. Courts must “look to the underlying invention” for § 101 purposes. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1374 (Fed. Cir. 2011).

Applying that framework in *Alice*, the Supreme Court held patent ineligible ***over 200 claims***—computer system, media, and method claims—that were directed to the same fundamental concept (intermediated settlement) and implemented using “purely functional and generic” computer components (such as a “data processing system” and a “data storage unit”). 134 S. Ct. at 2359-60. Likewise, the Federal Circuit has consistently ruled that claims in the medical field that are directed to implementation of mental processes are patent ineligible. *See, e.g., In re BRCA1- and BRCA2-Based Hereditary Cancer Test Patent Litig.*, 774 F.3d 755, 763-64 (Fed. Cir. 2014) (“*BRCA*”) (claims involved making comparisons to identify a gene indicative of breast cancer); *SmartGene, Inc. v. Adv. Biological Labs. SA*, 555 F. App’x 950, 955 (Fed. Cir. 2014) (unpublished) (claims involved comparisons to identify medical options).

Whether a claim is patent-eligible under 35 U.S.C. § 101 is a threshold question of law that is routinely resolved on the pleadings. *See, e.g., Internet Patents Corp.*, 790 F.3d at 1343 (affirming invalidity under § 101 on the pleadings); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1360 (Fed. Cir. 2015) (same); *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1349 (Fed. Cir. 2014) (same); *American Well Corp.*, 2016 WL 3255011, at *1 (judgment of invalidity under § 101 on the pleadings). Resolving eligibility “at the outset may ‘conserve[] scarce judicial resources and spare[] litigants the staggering costs associated with discovery and protracted claim construction litigation.’” *American Well Corp.*, 2016 WL 3255011, at *1 (alteration in original) (citation omitted).

IV. ARGUMENT

The asserted claims of the patents-at-issue are ineligible because they: (1) are directed to abstract ideas (including mental steps) long used in the medical profession; and (2) add only non-inventive elements (such as conventional computer components and medical features) that, individually or in combination, do not make the claims patent-eligible.

InfoBionic focuses below on the four patent claims for which CardioNet provided specific allegations. CardioNet's complaint cannot be read to allege infringement of other claims because CardioNet was required to provide a "statement of the claim showing the pleader is entitled to relief." Fed. R. Civ. P. 8(a)(2); *see also American Well Corp.*, 2016 WL 3255011 at *3.² Regardless, analysis of those four claims is dispositive because they are representative. *See, e.g., Alice*, 134 S. Ct. at 2359-60 (invalidating 208 claims across four patents based on two representative claims); *Content Extraction*, 776 F.3d at 1344 (same, 242 claims).

A. **The '767 Patent Claims Are Ineligible Under § 101**

1. **The '767 Patent Claims Are Directed To An Abstract Idea**

The '767 patent claims are directed to the age-old concept of gathering a limited set of patient data and then determining whether it is necessary to gather additional data—a common activity that medical professionals have long performed to ensure efficient use of resources. Claim 9 breaks that abstract concept into three basic steps: (1) "transmitting to the central unit an initially transmitted data set related to the monitored data set"; (2) "the central unit analyzing the initially transmitted data set to determine whether an additional data set related to the monitored data set is required to be transmitted by the remote monitoring unit"; and (3) "the

² CardioNet's Second Amended Complaint was filed in March 2016. Consequently, CardioNet cannot rely on Form 18, which was abrogated effective December 1, 2015.

central unit, when the additional data set related to the monitored data set is required, instructing the remote monitoring unit that the additional data set is to be transmitted.” *See* § II.A, *supra*.

That concept is just as abstract as similar ideas and “methods of organizing human activity” that courts have found patent ineligible, such as classifying and storing digital image data in an organized manner (*TLI*, 2016 WL 2865693, at *5), tracking an individual’s financial transactions to determine whether they exceed a pre-set spending limit (*IV*, 792 F.3d at 1367), collecting customer data to determine whether to modify product pricing (*OIP*, 788 F.3d at 1362), “comparing [gene] sequences and determining the existence of alterations” (*BRCA*, 774 F.3d at 763-64), and comparing new and stored information and using rules to identify medical options (*SmartGene*, 555 F. App’x at 955). At root, the claims are directed to “human mental work,” which has long been ineligible, even if implemented with computer technology.

CyberSource, 654 F.3d at 1371 (Fed. Cir. 2011); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).

Claim 9 recites nothing more than the way medical professionals have routinely monitored patient data for generations—for example, when a nurse monitors a patient’s vital signs, periodically reports them to the physician, and then provides additional information when the doctor requests it. Replacing “remote monitoring unit” with “nurse” (red font) and “central unit” with “physician” (blue font) in claim 9 illustrates that the claim recites that age-old idea:

Claim 9 of '767 Patent	Performance By Medical Professionals
9. A method of monitoring a patient, comprising the steps of providing a monitoring apparatus including	9. A method of monitoring a patient, comprising the steps of providing a nurse and a physician including
a remote monitoring unit associated with the patient,	a nurse associated with the patient,
a central unit , and	a physician , and
a communications device which selectively establishes a communications link between the remote monitoring unit and the central unit ;	a communications device [e.g., fax] which selectively establishes a communications link between the nurse and the physician ;
the remote monitoring unit obtaining a	the nurse obtaining a monitored data set

monitored data set for the patient;	[e.g., ECG data] for the patient;
the remote monitoring unit establishing a communications link with the central unit ;	the nurse establishing a communications link with the physician ;
the remote monitoring unit transmitting to the central unit an initially transmitted data set related to the monitored data set;	the nurse transmitting to [e.g., faxing] the physician an initially transmitted data set related to the monitored data set;
the central unit analyzing the initially transmitted data set to determine whether an additional data set related to the monitored data set is required to be transmitted by the remote monitoring unit ;	the physician analyzing the initially transmitted data set to determine whether an additional data set related to the monitored data set is required to be transmitted by the nurse ;
the central unit , when the additional data set related to the monitored data set is required, instructing the remote monitoring unit that the additional data set is to be transmitted from the remote monitoring unit to the central unit and instructing as to a time at which the additional data set is to be transmitted; and	the physician , when the additional data set related to the monitored data set is required, instructing the nurse that the additional data set is to be transmitted from the nurse to the physician and instructing as to a time at which the additional data set is to be transmitted; and
the remote monitoring unit transmitting the additional data set to the central unit at the time instructed by the central unit based on the initially transmitted data set received from the remote monitoring unit .	the nurse transmitting the additional data set to the physician at the time instructed by the physician based on the initially transmitted data set received from the nurse .

Although the '767 patent states a preference for “fully automated” analysis, it admits that the central unit “may be aided in its decision making by human review and consideration of the situation,” and that “[t]he human review [] may be conducted by a medical technician or by the patient’s physician.” ’767 patent (Ex. 1) at 5:44-51. This confirms that the claimed analysis is an “unpatentable mental process” because it “can be performed in the human mind” of the physician. *CyberSource*, 654 F.3d at 1372. In other words, far from the type of “specific asserted improvement in computer capabilities” which might confer patent eligibility, claim 9 invokes computers “merely as a tool” (and, in this case, an optional tool) to perform an abstract idea. *Enfish, LLC v. Microsoft Corp.*, --- F.3d ----, 2016 WL 2756255, at *5 (Fed. Cir. May 12, 2016).

2. The '767 Patent Claims Add Nothing Inventive

Claim 9 adds nothing inventive to the abstract idea. It recites three generic pieces of hardware identified, functionally, by the activities they perform: a “remote monitoring unit,” a “central unit,” and “a communications device” that allows the remote monitoring unit and central unit to communicate. '767 patent (Ex. 1) at 8:1-30; *see* § II.A, *supra*. Those are precisely the sort of conventional features that the Supreme Court and Federal Circuit have held insufficient to satisfy § 101. For example, in *Alice*, the claims recited a computerized “central unit” that could communicate electronically with two parties and monitor transactions between them to ensure sufficient funds to complete the transaction. *Id.* at 2359-60. The Supreme Court held that those claims recited only “purely functional and generic” computer components (“a ‘data processing system’ with a ‘communications controller’ and ‘data storage unit’”) performing the “most basic functions of a computer” (obtaining and adjusting data and issuing automated instructions), which did not make the claims patent eligible. *Id.*; *see also, e.g., OIP*, 788 F.3d at 1361 (collecting data from remote devices to allow a central unit to monitor customer reaction to prices); *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed. Cir. 2012) (“selectively forwarding” information and reply data).

That law compels same conclusion here. Claim 9’s features are indistinguishable from the “purely functional and generic” computer features that did not make the claims eligible in *Alice*, 134 S. Ct. at 2360, and the other cited cases. The '767 patent claims (and specification) nowhere explain how to program those generic components; at most they recite a “computer brain” for performing the abstract idea—which adds nothing inventive. *IV*, 792 F.3d at 1370-71; *Internet Patents Corp.*, 790 F.3d at 1348; *Dealertrack*, 674 F.3d at 1333.

Finally, the '767 patent claims (and specification) do not purport to be a specific solution “necessarily rooted in computer technology in order to overcome a problem specifically arising the realm of computer networks,” *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014), or a specific “technical improvement over prior art” computer technology, *Bascom Global Internet v. AT&T Mobility LLC*, --- F.3d ---, 2016 WL 3514158, at *7 (Fed. Cir. Jun. 27, 2016). The claims only employ conventional hardware in lieu of medical professionals, which confirms that the claims do not need a computer in the first place. *See Benson*, 409 U.S. at 68 (computer-implemented claims performable “mentally” “without a computer”); *CyberSource*, 654 F.3d at 1373 (computer-implemented claims performable with “pencil and paper”). Although the patent specification asserts that the purported invention makes more efficient use of resources (such as “medical personnel’s time”), *see* '767 patent (Ex. 1) at 3:5-17, such “methods that merely ‘automate or otherwise make more efficient’ traditional methods or techniques described in prior art do not render those claims patent eligible.” *American Well Corp.*, 2016 WL 3255011, at *9 (quoting *OIP*, 788 F.3d at 1363); *IV*, 792 F.3d at 1367.

B. The '850 And '996 Patent Claims Are Ineligible Under § 101

1. The '850 And '996 Patent Claims Are Directed To An Abstract Idea

The '850 and '996 patent claims are directed to the common-sense abstract idea of checking data from a medical device against human assessments to ensure accuracy before displaying the data in a convenient format. Claim 31 of the '850 patent and claim 12 of the '996 patent recite: (1) obtaining a patient’s heart rate data; (2) identifying irregular heartbeats (atrial fibrillations or other arrhythmias) using a machine; (3) receiving human assessments of the data; and (4) if the human assessments validate the machine results, graphing the heart rate data and irregular heartbeat events on a common timescale. '850 patent (Ex. 2) at 9:40-60; '996 patent

(Ex. 3) at 6:53-6:12; *see also Dealertrack*, 674 F.3d at 1333 (examining claims in “simplest form” to identify the “basic concept” at issue).³

Comparing two data sets to detect events—here, comparing machine-assessed and human-assessed irregular heartbeats to determine whether the machine results are accurate—is a core mental process. That is, for example, the same thing a doctor does when consulting a colleague for a second opinion before presenting a diagnosis. And that is the same type of mental activity that has repeatedly been held abstract, especially in the medical field. For example, the Federal Circuit found abstract the concept of comparing gene sequences to identify alternations in *BRCA*, 774 F.3d at 763, and the concept of comparing new and stored patient information and using rules to identify medical treatment options in *SmartGene*, 555 F. App’x at 954-55. Just as in those cases, the data comparisons here are “mental information-comparison[s]” that “doctors do routinely.” *SmartGene*, 555 F. App’x at 954-55.

Likewise, graphing the patient’s irregular heartbeat events and heart rate data on the same timescale is an abstract mental process that medical professionals have long done with pen and paper—for example by identifying and marking anomalies on a patient’s ECG. The courts have routinely held ineligible computerized methods that: (a) can be performed with pen and paper, *see Benson*, 409 U.S. at 67 (converting binary coded decimal numbers to pure binary); *CyberSource*, 654 F.3d at 1371 (detecting fraud in internet credit card transactions); (b) involve correlating data, *see Alice*, 134 S. Ct. at 2352 n.2 (correlating shadow credit and debit records); and, (c) require displaying data, *IV*, 792 F.3d at 1369-71 (displaying customized web content in a browser). Just as in those cases, the ’966 and ’850 patent claims are directed to an abstract

³ Although claim 12 requires *using* the human assessments, whereas claim 31 only requires *receiving* them, InfoBionic assumes that both claims have the narrower scope for purposes of this motion to obviate any dispute about claim scope. *See American Well Corp.*, 2016 WL 3255011, at *1 (assuming construction favorable to patentee for purposes of § 101).

idea—a basic mental process—and (at most) use computers “as a tool.” *Enfish*, 2016 WL 2756255, at *5.

2. The '850 and '996 Patent Claims Add Nothing Inventive

The '850 and '996 patent claims add nothing inventive to the abstract idea of checking data from a medical device against human assessments to ensure accuracy before displaying the data in a convenient format. They instead recite only conventional hardware or routine steps—“a monitoring system” to obtain the heart rate data and identify irregular heartbeats, a “monitoring station” for receiving this information, a “processing system” that can depict the information graphically, and software for performing all of those functions. '850 Patent (Ex. 2), cl. 31; '996 Patent (Ex. 3), cl. 12. The patent admits that each of those functional components is conventional and generic. *See* '850 Patent (Ex. 2) at 2:25-51, 4:65-5:2, 5:20-49; § II.B, *supra*. These components are precisely the sort of “purely functional and generic” components and “basic functions of a computer” that are insufficient to meet the requirements of § 101. *Alice*, 134 S. Ct. at 2359-60 (quoting *Mayo*, 132 S. Ct. at 1294, 1298); *see id.* at 2360 (“a ‘data processing system’ with a ‘communications controller’” is “purely functional and generic”); *Content Extraction*, at 776 F.3d 1345-47 (using computers for receiving, recognizing, and processing data are non-inventive); *IV*, 792 F.3d at 1369-71 (“display[ing]” customized content in web browser is non-inventive). As in such cases, the '850 and '996 patent claims nowhere explain *how* to program the components to perform the abstract idea—a hallmark of patent-ineligible claims. *See IV*, 792 F.3d at 1370-71; *Dealertrack*, 674 F.3d at 1333.

As discussed, the abstract idea of comparing the data sets and graphing the data if there is sufficient correlation can be performed by a medical practitioner using pencil and paper, which confirms that the claims are patent ineligible because they merely substitute generic computer

functionality for human activity. *See, e.g., IV*, 792 F.3d at 1371 (computerized budgeting process non-inventive because it “‘could still be made using a pencil and paper’ with a simple notification device”); *CyberSource*, 654 F.3d at 1372 (computerized fraud detection non-inventive because it could be done with pen and paper). The claimed solution does not purport to be “necessarily rooted in computer technology,” *DDR*, 773 F.3d at 1257, or “a technical improvement over prior art” computer technology, *Bascom*, 2016 WL 3514158, at *7. At most, it purports to automate an abstract idea in an unspecified way to perform it more efficiently; that is insufficient under § 101. *IV*, 792 F.3d at 1367; *OIP*, 788 F.3d at 1363; *American Well Corp.*, 2016 WL 3255011, at *9.

C. The ’715 Patent Claims Are Ineligible Under § 101

1. The ’715 Patent Claims Are Directed To An Abstract Idea

The ’715 patent is directed to the common abstract idea of filtering patient heartbeat signals when necessary to increase accuracy and expressly contemplates that a person makes the decision to do so.

Claim 20 recites a cardiac monitoring apparatus with (1) a “communications interface,” (2) “a real-time heart beat detector,” (3) a “T wave filter,” and (4) “a selector that activates the frequency domain T wave filter” upon receiving a “message.” ’715 Patent (Ex. 4) at 7:45-53. As the specification states, the “heart” and “most important aspect” of the claims, *Ultramercial*, 772 F.3d at 714; *Internet Patents Corp.*, 790 F.3d at 1348, is “selectively” activating the T wave filter whenever it is needed—when the T waves are tall enough to potentially interfere with accurate heart rate detection. ’715 Patent (Ex. 4) at 1:40-43, 2:44-59, 4:61-5:10; § II.C, *supra*.

That is an abstract idea, a mental process that doctors have long performed. Indeed, the patent discloses that a *human*, the system operator, decides when to activate or deactivate the T

wave filter. *Id.* at 2:44-59; 4:61-5:10. That is the same decision a doctor would traditionally make when, for example, asking a nurse to activate a T wave filter or mentally filtering out T waves when viewing an ECG. To use the claimed apparatus, the doctor (or operator) can press a button that sends a message to activate the filter, but the doctor must still make the initial decision to filter the data. Thus, the claim’s minor, incremental, automation of human activity does not even obviate the need for the critical human mental step.

The abstract mental concept of ’715 patent claim 20 “does not become nonabstract” merely because the claim involves the “technological environment” of conventional components and medical instruments. *See, e.g., Alice*, 134 S. Ct. 2360; *IV*, 792 F.3d at 1366. The Federal Circuit’s recent decision in *TLI* is instructive. In that case, although the representative claim required “concrete, tangible components such as ‘a telephone unit’ and a ‘server,’ the specification [made] clear that the recited physical components merely provided a generic environment in which to carry out the abstract idea of classifying and storing digital [data] in an organized manner.” 2016 WL 2865693 at *3. The same is true here. The claimed components merely allow the user to practice the abstract idea of filtering data when appropriate. And the data filtering concept here is just as abstract as the data-classification idea underlying the ineligible computer-implemented claims in *TLI*, and the claims in several other cases. *See, e.g., Content Extraction*, 776 F.3d at 1347; *Cyberfone Sys., LLC v. CNN Interactive Group, Inc.*, 558 F. App’x 988, 991-92 (Fed. Cir. 2014) (unpublished).

2. The ’715 Patent Claims Add Nothing Inventive

Claim 20 adds nothing inventive. The components recited in claim 20—“a cardiac monitoring apparatus,” “a communications interface,” a “beat detector” and “a selector,” ’715 Patent (Ex. 4) at 7:45-53—are “purely functional and generic” computer and medical

components that are insufficient to “transform the claimed abstract idea into a patent eligible application.” *Alice*, 134 S. Ct. at 2357, 2360; *see also Content Extraction*, at 776 F.3d 1345-47.

Claim 20 also recites using “a frequency domain T wave filter.” ’715 Patent (Ex. 4) at 7:48. That limitation does not make the claim patent eligible because, as discussed, using a T wave filter is well-understood “activity previously engaged in by [those] who work in the [medical] field.” *Mayo*, 132 S. Ct. at 1298. It does not make the claims patent-eligible any more than the conventional scanning and optical character recognition technology used to collect and classify the data in *Content Extraction*, 776 F.3d at 1349, or the “telephone unit” used to collect data in *TLI*, 2016 WL 2865693, at *6. At most, filtering out a particular type of data (i.e., filtering out a patient’s abnormal T waves) is a mere field-of-use limitation that does not confer eligibility just like customizing a particular type of data (user-specific internet data) was not enough in *IV*, 792 F.3d at 1369-71, and “selectively forwarding” a particular type of data (an individual’s auto loan data) was insufficient in *Dealertrack*, 674 F.3d at 1333. Claim 20 reflects no inventive concept for deciding *when* T wave filtering is appropriate or *how* to do it. *See TLI*, 2016 WL 2865693, at *7; *Internet Patents*, 790 F.3d at 1348; *Dealertrack*, 674 F.3d at 1333.

Claim 20 (like the other asserted claims) does not purport to be “necessarily rooted in computer technology,” *DDR*, 773 F.3d at 1257, or “a technical improvement over prior art” computer technology, *Bascom*, 2016 WL 3514158, at *7. Instead, it expressly requires human involvement and does nothing more than provide an operator with an apparatus to turn the T wave filter on or off, as one deems appropriate. But merely automating a basic human activity is insufficient under § 101. *See IV*, 792 F.3d at 1367; *OIP*, 788 F.3d at 1363; *American Well Corp.*, 2016 WL 3255011, at *9.

D. The Machine-or-Transformation Test Confirms The Claims' Ineligibility

Finally, the machine-or-transformation test—which, although not the sole test, has been called “an important and useful clue”—confirms that the asserted claims are ineligible. *See Bilski*, 561 U.S. at 603. The claims’ generic computer components (programmed in some unspecified way), standard communications technology, and other conventional hardware do not qualify as a “particular machine” under the “machine prong.” *See Ultramercial*, 772 F.3d at 716-17. Nor do the claims transform any article into a different state or thing under the “transformation prong” of the test; they involve only monitoring patient health and “[a]ny transformation from the use of computers or the transfer of content between computers is merely what computers do,” *id.* at 717. Regardless, “satisfying the machine-or-transformation test, by itself, is not sufficient to render a claim patent-eligible” because “not all transformations or machine implementations infuse an otherwise ineligible claim with an ‘inventive concept.’” *DDR Holdings*, 773 F.3d at 1256.

Under the two-step *Alice* analysis discussed above, the asserted claims are ineligible under § 101 because they are directed to abstract ideas—mental processes commonplace in the medical field—and add nothing inventive.

V. CONCLUSION

InfoBionic respectfully requests that the Court grant its motion for judgment on the pleadings, find the patent claims invalid for lack of patent eligible subject matter under § 101; dismiss the corresponding counts of the Second Amended Complaint [#135]; and grant any other relief the Court deems just.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing DEFENDANT INFOBIONIC, INC.'S MEMORANDUM IN SUPPORT OF ITS MOTION FOR JUDGMENT ON THE PLEADINGS THAT ALL ASSERTED CLAIMS OF U.S. PATENT NOS. RE43,767, 7,212,850, 7,907,996 AND 7,099,715 ARE INVALID UNDER 35 U.S.C. § 101 was delivered to the registered participants as identified on the Notice of Electronic Filing (NEF) and that paper copies will be sent to those indicated as non-registered participants on the above date.

/s/ Charles H. Sanders